

2005 ANNUAL REPORT
OF
MONTANA'S NONPOINT SOURCE
MANAGEMENT PROGRAM

by
Montana Department of Environmental Quality
Planning, Prevention and Assistance Division
Water Quality Planning Bureau

MONTANA VISION STATEMENT: Water quality will be restored and protected through the implementation of voluntary best management practices identified in science based, community supported watershed plans.

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NPS HIGHLIGHTS OF THE YEAR 2005

New staff/positions and section assigned to strategic roles in the development of the necessary tools needed to meet priority goals.

The 2005 legislature appropriated new staff, state funds and federal spending authority to assist with the court imposed deadlines.

EPA approved the 2004 Montana 303(d) List of Impaired Water Bodies on December 23, 2004.

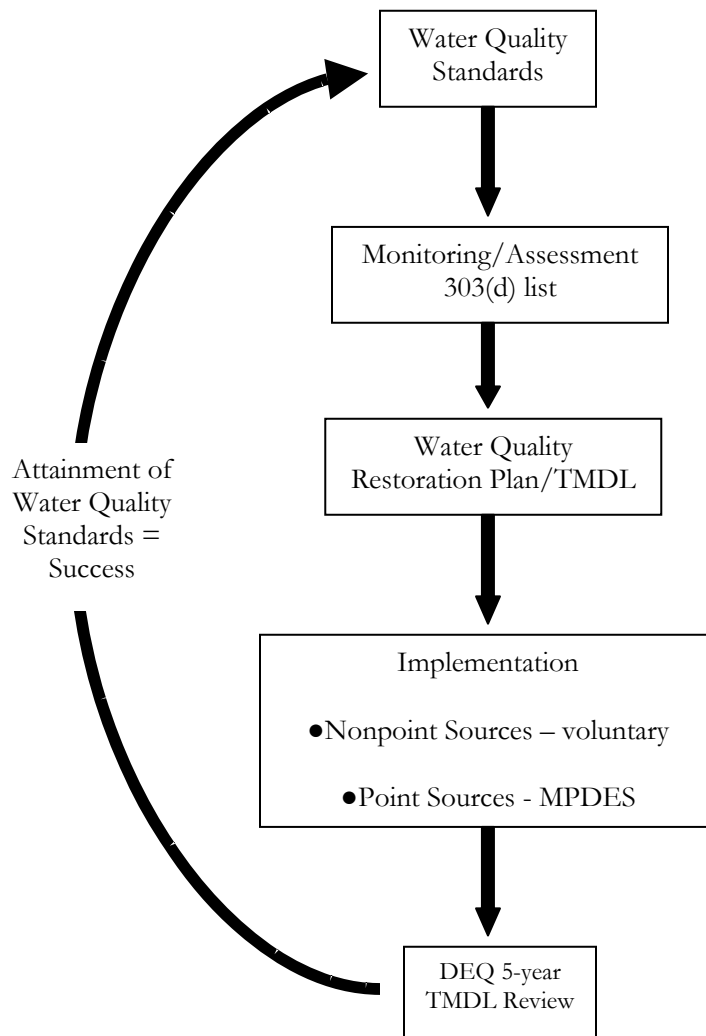
By spring of 2006, the Water Quality Monitoring Section has finished field sampling of 396 water body segments. Beneficial use support determinations have been completed on 83% of the water body segments on the reassessment list (MT DEQ 2004). DEQ continues the systematic quality assurance review of water quality assessments. These reviews include technical and administrative components (MT DEQ 2005c). Also, the records of attainment (Data Review 8) now include summaries for physical, chemical, habitat and biological information, listing history and an overall summary to assist the user.

Watersheds with TMDLs completed in 2005 include: Big Spring, Bitterroot Headwaters, Bobtail, Dearborn, Flathead Headwaters, Grave, Ninemile, Sun and Prospect (metals). Existing TMDL planning areas with ongoing focused efforts include: Blackfoot (Nevada/Middle & Lower), Bitterroot (below headwaters), Boulder/Big Timber, Beaverhead, (Big Hole (Upper, North Fork, Middle & Lower), Tongue/Powder/Rosebud, Upper Gallatin, Redwater, Shields, St. Regis and Yaak.

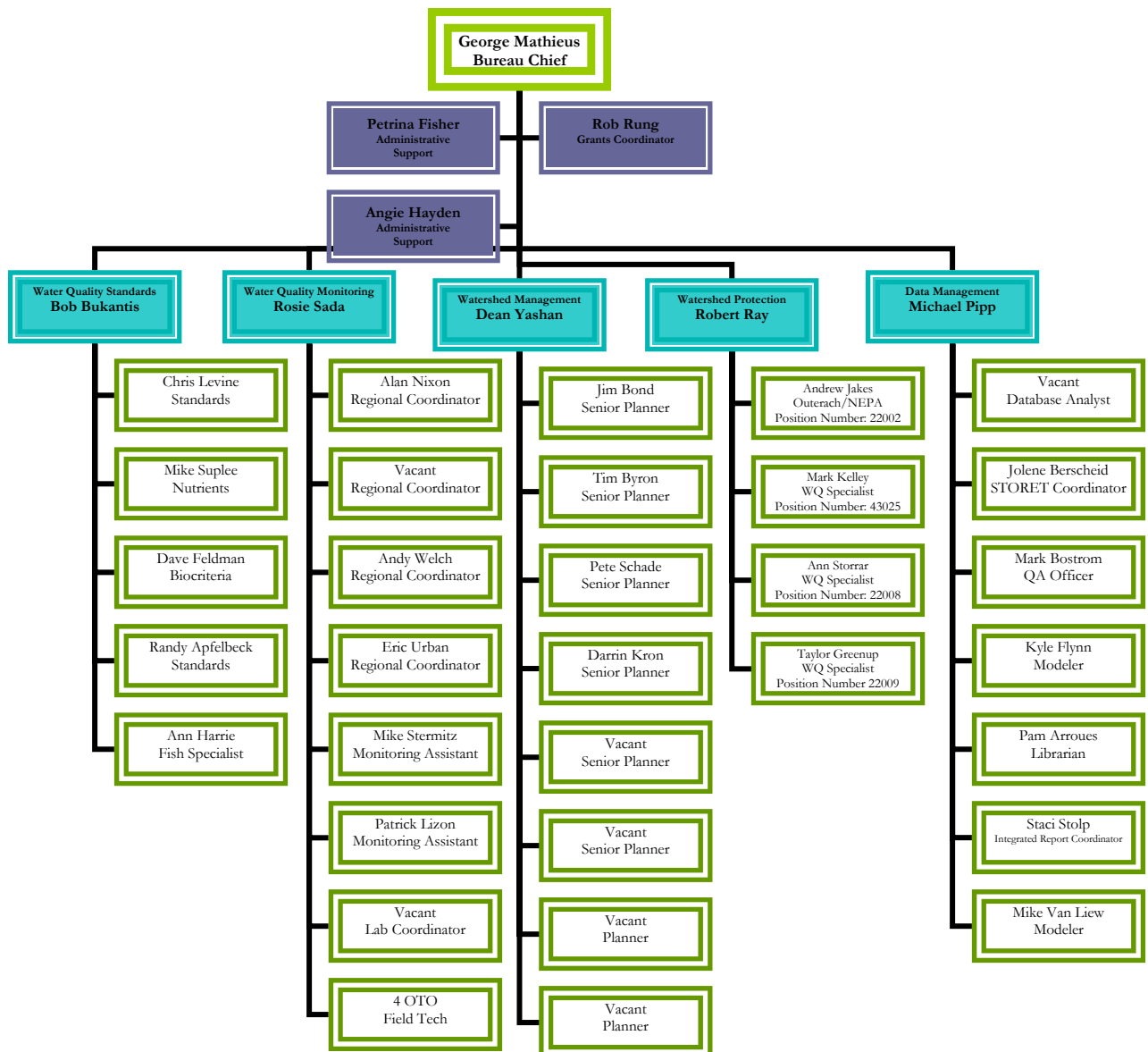
PART 1. WATER QUALITY PLANNING BUREAU OVERVIEW

Section 319 of the Clean Water Act requires states to: 1) assess water bodies for nonpoint source (NPS) impacts, 2) develop nonpoint source management programs, 3) implement those programs, and 4) report on nonpoint source implementation to the public and to the U.S. Environmental Protection Agency (EPA). This report is Montana's 2005 annual report.

By the end of 2005, the Watershed Protection Section was fully operational and many vacancies had been filled throughout the Bureau. Presently, five sections are operating as one unit, which are all contributing to attaining and maintaining water quality standards. The Bureau is focusing on near, short-term and long-term goals, with priorities focusing on court-order and consent decree requirements. The below Figure illustrates how the fully operational bureau will assess and address water quality needs.



The following Figure displays new positions and staff and how they fit into the overall bureau.



PART 2. WATER QUALITY PLANNING BUREAU UPDATE

2.1 WATER QUALITY STANDARDS SECTION

2.1.1 NUTRIENTS

In June 2005 the Standard Section completed another phase of ongoing work towards the goal of establishing numeric nutrient standards in rule. The results indicate that ecoregions (Omernik 1987), at level III and IV, should make a good geospatial framework for establishing numeric nutrient criteria in Wadeable streams and small rivers. The results also indicated that nutrient concentrations that protect particular beneficial uses may be quite low in some parts of the state, and would therefore be

difficult to achieve for many conventional waste water treatment plants. Because of this, affordability of achieving nutrient standards has become an important issue, especially to small communities. In Montana, the economics of waste treatment must be considered when establishing water quality standards (MCA 75-5-301 (2) (a)). Therefore, the Standards Section is working with a contractor to develop an affordability evaluation process to determine if waste treatment to achieve numeric nutrient standards could be, for particular communities, prohibitively expensive.

Beginning spring 2006, the Standards Section will also be undertaking a statewide probabilistic opinion survey to determine what the public feels is a nuisance amount of algae growth in streams. The results of this work will help refine impact thresholds for the recreational beneficial use and, in turn, the resulting numeric nutrient criteria.

2.1.2 BIOCRITERIA

Two new macroinvertebrate assessment models are available for use by the Water Quality Planning Bureau (WQPB) of the Montana Department of Environmental Quality (DEQ). They are the Multimetric Indices (MMI) and the River Invertebrate Prediction and Classification System (RIVPACS). These models improve DEQ's ability to make aquatic life use support determinations relative to DEQ's earlier macroinvertebrate assessment tool found in the WQPB Standard Operating Procedure (MT DEQ 2005d; Jessup 2005).

The following discussion summarizes the key concepts to be familiar with when interpreting the macroinvertebrate model results. First, the MMI's are organized based upon the ecoregions of Montana. Ecoregions are mapped areas based upon climatic, geophysical, and general vegetation characteristics (Woods et al., 2002). Second, both models use reference data for their development. The concept of ecological reference is explained within Hughes et al. (1986), Suplee et al. (2005) and in the Western Center for Monitoring and Assessment of Freshwater Ecosystems website (<http://www.cnr.usu.edu/wmc>). The reference data used to generate both models were derived from reference sites selected via a thorough review process (Suplee et al., 2005; Hawkins pers. Com 2005)

2.1.3 WETLANDS

Wetland monitoring activities for 2005 include:

- Refinement of Montana's wetland rapid assessment method
- Development of a guidebook for the field form
- Development of guidance for correctly recording rapid assessment data
- Development of an Access database for wetland rapid assessment data
- Collection of wetland rapid assessment data from >1000 wetlands during 2005 field season
- Development of a Coordination Plan for implementing the field form in 2006.
- Biological summary reports were finished for vegetation, birds and amphibians.
- Development of Wetland monitoring and assessment guidelines and strategies (draft - currently under review).

All information is posted at:

<http://www.deq.mt.gov/wqinfo/Wetlands/Index.asp> (See Rapid Assessment and Biological reports)

2.1.4 OTHER WATER QUALITY STANDARDS UPDATES

In 2005, there was a continued effort towards identification and data collection on reference sites. These efforts are significant for interpretation of WQ Standards and TMDL development. Report on reference streams:

http://www.deq.state.mt.us/wqinfo/Standards/Refsites_writeup_FINALPrintReady.pdf

In 2005, members of the water quality standards section recommended to Montana Water Pollution Control Advisory Council the following actions, thus completing a major triennial review:

RECOMMENDATION: The department requests that WPCAC recommend that the Department request the Board of Environmental Review to initiate rulemaking for the proposed changes to Department Circular WQB-7, Surface Water Quality Standards and Procedures, ARM 17.30.601 et. Seq., Mixing Zone Rule ARM 17.30.516(4), Nondegradation Rule ARM 17.30.706(3), Groundwater Rules ARM 17.30.1001, 1006 and 1007, Non-public water supply systems rules ARM 17.36.331,335,336 and 345 and adoption of New Rule I and II.

2.2 WATER QUALITY MONITORING SECTION

By spring of 2006, the Water Quality Monitoring Section finished field sampling of 396 water body segments. Beneficial use support determinations have been completed on 83% of the water body segments on the reassessment list (MT DEQ 2004). DEQ continues the systematic quality assurance review of water quality assessments. These reviews include technical and administrative components (MT DEQ 2005c). Also, the records of attainment (Data Review 8) now include summaries for physical, chemical, habitat and biological information, listing history and an overall summary to help the reader understand the information.

2.2.1 MONTANA STATEWIDE MONITORING

Montana has over 175,000 miles of rivers and streams, 10,000 lakes covering nearly a million acres, and about 840,000 acres of wetlands. DEQ is currently revising the statewide monitoring strategy. A brief summary of the projects that are currently in place are indicated below:

Stream Water Quality Monitoring and Assessment Project



The main objective of this project is to characterize the streams, lakes and rivers in Montana, and to determine their beneficial use support. The main focus of the State has been on assessing all those waters listed on Appendix B- Reassessment list (MT DEQ 2004). These waters were removed from the 1996 303(d) list of impaired waters due to a lack of sufficient credible data. In 2000, pursuant to Montana law, DEQ implemented the Sufficient and Credible Data Process (MT DEQ 2005a). This process requires sufficient credible data to support the listing of a water body on the State's 303(d) list. Monitoring activities across the state are divided into 4 basins: Columbia, Lower Missouri, Upper Missouri, and Yellowstone. Physical, habitat, chemical, and biological sampling is conducted at each site. The sampling timeframe, detailed guidance on site selection, and field sampling procedures can be found in the State's Quality Assurance Project Plan (QAPP) for sampling and water quality assessment of streams and rivers in Montana (MT DEQ 2005a), and in the Field Procedures Manual (MT DEQ 2005b).

Environmental Monitoring Assessment Program (EMAP)

The main objective of this project is to assess and characterize perennial streams and rivers statewide using a probabilistic approach. MT DEQ is a participating partner in EPA's EMAP Western pilot. Sites were selected randomly across the State. During 2000-2004, 120 sites were visited and in 70 of those sites, biological, chemical, and physical habitat parameters were collected on wadeable streams according to EMAP protocols (US EPA 2004). EPA contractors completed the sampling on the 15 non-wadeable sites according to EMAP protocols for (US EPA 2003). As part of this cooperative agreement, MT DEQ also sampled approximately 50 candidate reference sites, reference site selection was done using best professional judgment and a GIS-screening process. A subset of these sites continues to be sampled 3 times per year to evaluate seasonal variability (Suplee et al. 2005). MT DEQ is currently working on the report.

Reference Condition Project



The main objectives of this project are: a) to establish a network of reference sites; b) to define reference conditions for use in assessments; and c) to help in the establishment of TMDL endpoints. Beginning in 2000, MT DEQ revisited the wadeable sites from Bahls' study (Bahls 1992), and identified additional sites using Best Professional Judgment. Sites were sampled using EMAP protocols (US EPA 2004) and visited twice a year to examine seasonal variability. Recently, MT DEQ has focused on sampling candidate reference sites in NE, SE, and SW Montana. A total of 18 sites were sampled 3 times per year during 3 years (2002-2004) in NE MT. Six sites were sampled 3 times a year for two years (2004-2005) in SW MT, and one year (2005) in SE MT. In 2006, the project will continue sampling 8 sites in SE MT, and 8 sites in the NW part of the state. DEQ has subcontracted with the University of Montana to conduct the field sampling. Protocols used in the reference project are described in the Quality Assurance Plan Reference Addendum (MT DEQ 2005a). MT DEQ has also tested the GIS approach to identify candidate reference sites, with limited success, and this time prefer to combine GIS methods with onsite inspections before candidate sites are selected. An intern was hired to compile a list of candidate reference sites from MT DEQ staff and other available sources. The site list has been reviewed and final candidate sites have been selected using a systematic screening approach that evaluates each site using a set of established criteria. In this screening process, a balance is made between the relative importance of site-specific impacts (e.g., heavily grazed riparian area) and watershed-level impacts (e.g., extensive timber harvest upstream of the site). A final report that explains this systematic approach is available (Suplee et al. 2005).

Lakes/Reservoirs Monitoring and Assessment Project

The main objectives of this project are: a) to develop a baseline for a lake classification system; b) to assess beneficial use attainment; and c) in the future to analyze trends, and monitor effectiveness. A lakes classification scheme has been in place since 2003. The objective of this project is to collect baseline nutrient and chlorophyll *a* data to identify lake characteristics that can be used to predict appropriate trophic status for lakes on a regional scale. DEQ has subcontracted with the University of Montana to conduct the field sampling. The sampling effort has focused on collecting

data from “reference” lakes (approximately 15 annually) until 2004, when the lakes and reservoirs selected for sampling came mainly from the Reassessment List (MT DEQ 2004). One mid-lake site is sampled, with the exception of larger reservoirs where two sites are sampled. Three samples are collected between June and September. The protocols can be found in the Quality Assurance Plan Lakes Addendum (MT DEQ 2005a).

Fixed Network Stream Monitoring and Assessment Project

The objective of this project is to characterize conditions and trends of wadeable rivers across the state. From 1999-2003, DEQ contracted with the USGS to monitor 38 fixed-station sites four times per year for water chemistry and continuous temperature recorders were placed at approximately one third of the sites (MT DEQ 2005a). The majority of the sites are located at the mouth of large tributaries that are entering the Yellowstone, Missouri and Clark Fork Rivers. These fixed-station sites are considered to be integrator sites since the water quality conditions near the mouth of a stream tend to reflect cumulative impacts that are occurring within the entire watershed. DEQ originally intended to collect macroinvertebrate, periphyton and chlorophyll samples from all of the fixed stations that have been sampled by USGS for water quality. However, biological monitoring was discontinued at several of the large river sites due to difficulties that were encountered in sampling and interpreting results. Instead, additional fixed station sites were established for the collection of biological samples near the mouth of other large tributaries that do not have active gauging stations or from additional upstream. Due to funding shortfalls, the frequency for sampling water chemistry was reduced from four times per year to once per year in 2004. MT DEQ collected the samples at the same time as the biological collection (macroinvertebrates and periphyton). In 2005, biological collection included just macroinvertebrates. An overall report is expected by 2006. This project will be restructured in 2006-2007.

Large Rivers Monitoring and Assessment Project

The main objectives of this project are: a) to develop appropriate biological indicators; b) refine standardized sampling protocols; c) assess beneficial use attainments; and d) to help in the establishment of TMDL endpoints. The non-wadeable rivers in MT include: the Missouri, Yellowstone, Clark Fork, Marias, Tongue, Flathead, Kootenai and Milk rivers. The frequency and type of monitoring occurring on these systems varies. To minimize duplication and to build from existing efforts, a contractor has been hired to review existing monitoring activities, evaluate existing protocols and to review existing data collected by different stakeholders. Based on these results, a long-term monitoring program for large, non-wadeable rivers will be developed. There are 10 large river segments on the Reassessment List (MT DEQ 2004) which are currently being evaluated.

2.3 WATERSHED MANAGEMENT

In 2005, Montana used the watershed approach to prioritize planning for water quality restoration in the state's 90 TMDL planning areas. The TMDL planning schedule fulfills a federal court order stating "all necessary TMDL's" must be completed by 2012. Montana's schedule for TMDL development was revised in accordance with the Settlement Agreement entered by the parties in *Friends of the Wild Swan et al., v. EPA et al.*, CV 97-35-M-DWM. The following website summarizes information on all approved water quality plans and TMDL's: <http://www.deq.mt.gov/wqinfo/TMDL/index.asp>

By the end of 2005, much work had been accomplished in the Watershed Management Section. Watersheds with completed TMDL's in 2005 include: Big Spring, Bitterroot Headwaters, Bobtail, Dearborn, Flathead Headwaters, Grave, Ninemile. Existing TMDL planning areas with ongoing focused efforts include: Blackfoot (Nevada/Middle & Lower), Bitterroot (below headwaters), Boulder/Big Timber, Beaverhead, (Big Hole (Upper, North Fork, Middle & Lower)), Tongue/Powder/Rosebud, Upper Gallatin, Redwater, Shields, St. Regis and Yaak.

A Success Story: Big Spring Creek



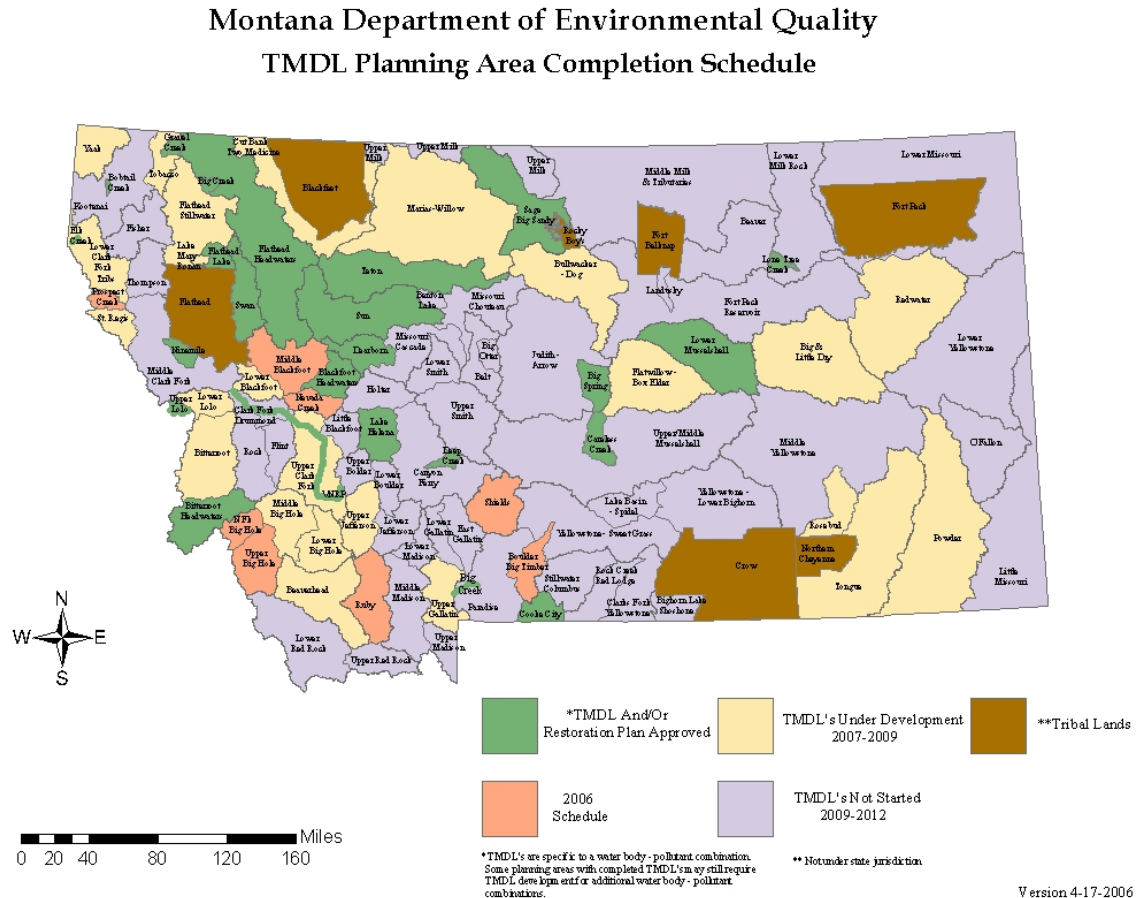
Big Spring Creek is a blue-ribbon spring-fed trout stream located in central Montana. In the early 1980s, PCBs were detected in fish tissue, prompting fish consumption advisories for fish caught in Big Spring Creek. Since then, numerous investigations involving assessment of soils, fish tissue, stream substrate and water samples have been conducted to determine the source of PCBs in the watershed. While conducting TMDL source assessments in 2003, DEQ homed in on the source of PCBs – raceway paints applied in the 1970's and 80's to the State-run Big Spring fish hatchery.

Since the identification of PCBs in hatchery raceway paints, Montana Fish Wildlife & Parks, who owns and operates the hatchery, has worked actively with the EPA, MT DEQ, and local advisory groups to remediate and restore Big Spring Creek and the fish hatchery. Hatchery production was shut down in 2004/2005 in order to remove PCB-laden paints from the fish hatchery raceways, and risk assessment and feasibility studies have been conducted to ascertain the level of risk to wildlife and public health, and to develop restoration options for Big Spring Creek.

The existing source of PCBs to Big Spring Creek has been removed and remediation of in-stream PCB concentrations and removal of fish-consumption advisories

remains a goal. Progress toward this goal is being realized as MT FWP continues to work collectively with a local PCB Advisory Committee to address public and stream health issues related to restoration and remediation options. Big Spring Creek is now on the mend thanks to a collaborative spirit and local and government assistance.

The figure below shows the 2006 annual Water Quality Restoration and TMDL Planning Schedule.



2.4 WATERSHED PROTECTION SECTION

In spring 2006, the Watershed Protection Section was fully staffed and began updating the 2006 Montana Nonpoint Source Management Plan. A full discussion of the section and its work will be presented in Part 3: Implementation of NPS Objectives. Montana's 2001 Nonpoint Source Management Plan can be accessed at the DEQ website: <http://www.deq.mt.gov/wqinfo/nonpoint/NonpointPlan.asp>

2.5 DATA MANAGEMENT SECTION

2.5.1 QUALITY ASSURANCE

In 2005, the QA program continued operations under the EPA approved Quality Management Plan (QMP). This was the second year for the program and lessons learned from the 2004 field season greatly improved the effectiveness of the QA program, particularly in the area of Assessment and Oversight of field chemistry data. Quality System documents developed, revised or approved during 2005: SOPs = 6, SAPs = 8, QAPPs = 3, Bureau-wide QA training: Two sessions DQOs, and QAPP presentation External QA training: Consulting contractors QAPP presentation at BSPPA convention in Butte, MT.

A couple of success story stem from the 2004 data evaluation that identified a chronic issue with missed holding times at the State DPHHS Laboratory. Simply identifying this issue and communicating to the State DPHHS Lab that this was an unacceptable practice resulted in a dramatic improvement in the rate of missed holding times. In 2004, the State DPHHS received requests from DEQ for 2087 tests with a holding time ≤ 28 days. Of these, 292 tests were performed out of holding time (~14% missed holding time). In 2005, the State DPHHS lab received requests from DEQ for 3143 tests with a holding time ≤ 28 days. Of these, 50 tests were performed out of holding time (~1.6% missed holding time). The majority of the holding times that were missed in 2005 were the result of delayed sample submittals by DEQ due to remote sampling locations, an item that will be addressed in 2006.

A second success story was the collection of additional field Quality Control (QC) samples (lab splits) in 2005 that allowed a more thorough evaluation of chemistry data. From this, QA was able to determine that there was a high probability that false positives were being returned from two contracted laboratories for the Total Kjeldahl Nitrogen (TKN _ Energy Labs) and Mercury (State DPHHS Lab) analyses. As corrective action, QA invoked the Investigation and Corrective Action Request (ICAR) policy described in both laboratories' Laboratory Quality Assurance Programs (LQAPs). Both labs investigated and discovered that there was indeed a positive bias for these two parameters and reanalyzed all samples that were identified. In the end, the discovery of these positive biases prevented approximately 75 incorrect pollutant water body combination listings that would have been reported in the State's 2006 Integrated Report. This could have led to unnecessary TMDL's costing upwards of \$750,000.

Looking forward to 2006, the QA program is planning to update (Revision 2) and resubmit the bureau's QMP to EPA for approval. Many of the lessons learned in the first two years will allow specific areas of concern that have been identified over the first two years to be addressed within the QMP and thus, programmatically. The QA program began the update in late 2005 by leading the development of "business plans" for the data management section as well as Procurements and Contracting. The term "business plan" is something of a misnomer as these documents lack a marketing strategy, which is a key element of a classical business plan. However, these business plans are basically business rule and workflow processes that describe the "how to" of data management as well as procurement and contracting. They will be incorporated by reference into revision 2 of the QMP at Chapter 5 - Planning Documentation, Chapter 8 - Information Systems, and Chapter 9 Grants and Financial Assistance.

2.5.2 OTHER DATA MANAGEMENT UPDATES

- In 2005, The Water Quality Bureau Library was updated with over 175 recent NPS additions references. An electronic version of the library is nearly complete, and anticipated to be web accessible by the end of 2006.
- The STORET database now has a full time data administrator and regular updates and trainings for the bureau were given.
- In 2005, two new modeling staff were hired to assist in meeting the court imposed TMDL schedule. Currently we are developing the necessary tools to complete TMDL's on large river systems i.e. Clark Fork, Flathead, Bitterroot.
- Development of a database system began that will vastly increase internal efficiencies.
- The 2006 Integrated Report 303(d) and 305(b) reporting will be completed in December 2006. The report will include all reassessments previously on the 1998 303(d) list.

2.6 319 GRANT PROGRAM OVERVIEW

Most of Montana's Nonpoint Source (NPS) program budget comes from the federal government. Section 319 funds 60 percent of project grants and DEQ's NPS program cost. During the 2005 grant cycle, DEQ received proposals totaling \$2.89 million dollars. The DEQ awarded \$1,388,140 to 19 watershed projects and one information and education project in 2005.

319 Projects for FY05

| Project Name | Project Sponsor | Project Type | 319 Funds Incremental | 319 Funds Base | **Non-Federal Match Funds | Other Federal Funds | Total Project Cost |
|--|--|-------------------------|-----------------------|----------------|---------------------------|---------------------|--------------------|
| Coal Creek Restoration Project | Flathead Basin Commission | Restoration | | \$26,000.00 | \$33,500.00 | | \$59,500.00 |
| Big Coulee Water Quality Improvement Project | Sun River Watershed Group | Restoration | | \$47,300.00 | \$78,200.00 | \$23,000.00 | \$148,500.00 |
| Upper, Middle Blackfoot / Nevada Creek TMDL Implementation Project | Blackfoot Challenge | Restoration | | \$89,740.00 | \$144,500.00 | \$193,200.00 | \$427,440.00 |
| Teton TMDL Implementation and Monitoring Project | Teton River Watershed Group | Restoration | | \$67,700.00 | \$91,500.00 | \$56,800.00 | \$216,000.00 |
| Elk & Pilgrim Creek Restoration Projects | Lower Clark Fork Watershed Group | Restoration | | \$42,400.00 | \$27,272.00 | \$3,000.00 | \$72,672.00 |
| DEQ Information and Education Program Implementation | Montana State University - Montana Watercourse | Information & Education | | \$75,000.00 | \$50,000.00 | \$21,000.00 | \$146,000.00 |

| | | | | | | | |
|---|---|---------------|----------------|-------------|----------------|--------------|----------------|
| Haskill Basin TMDL | Flathead Conservation District | TMDL Planning | \$27,975.00 | | \$18,650.00 | | \$46,625.00 |
| Swift Creek TMDL | Whitefish County Water & Sewer District | TMDL Planning | \$22,940.00 | | \$15,293.33 | | \$38,233.33 |
| Middle Blackfoot / Nevada Creek & Lower Blackfoot TMDL Planning | Blackfoot Challenge | TMDL Planning | \$300,000.00 | | \$200,000.00 | | \$500,000.00 |
| Upper Gallatin | Blue Water Task Force (non-profit) | TMDL Planning | \$80,000.00 | | \$53,333.33 | | \$133,333.33 |
| Mid & Lower Big Hole | Big Hole Watershed Committee | TMDL Planning | \$15,000.00 | | \$10,000.00 | | \$25,000.00 |
| Upper Jefferson | Jefferson Valley CD | TMDL Planning | \$110,000.00 | | \$73,333.33 | | \$183,333.33 |
| Beaverhead | Beaverhead CD | TMDL Planning | \$100,000.00 | | \$66,666.66 | | \$166,666.66 |
| Shields | Park CD | TMDL Planning | \$30,000.00 | | \$13,333.33 | | \$43,333.33 |
| Tobacco | Kootenai River Network | TMDL Planning | \$100,000.00 | | \$66,666.66 | | \$166,666.66 |
| Bitterroot Lolo | Montana Trout | TMDL Planning | \$20,000.00 | | \$13,333.00 | | \$33,333.00 |
| Upper Gallatin | Montana State University | TMDL Planning | \$60,000.00 | | \$40,000.00 | | \$100,000.00 |
| Lower Clark Fork Tributaries | Green Mountain Conservation District | TMDL Planning | \$125,000.00 | | \$83,333.33 | | \$208,333.33 |
| Paradise | Park CD | TMDL Planning | \$50,000.00 | | \$33,333.33 | | \$83,333.33 |
| TOTALS | | | \$1,040,915.00 | \$348,140.0 | \$1,112,248.30 | \$297,000.00 | \$2,798,303.30 |

It is the objective of the NPS program to have contracts in place by April 30. In 2005, this goal was missed by several weeks. But all contracts were in place by June 30 in time for obligating state contractual funds. The NPS program has adopted the tools described below to efficiently account for funds expended and expedite payment of bills.

Attachment B—The DEQ contract provides NPS project sponsors with a spreadsheet-billing form called Attachment B. The Excel format reduces math errors, shows cumulative totals by project task, and organizes match reporting for contractors. In both the billing and match reporting sheets, contract expenditures to date are [displayed advising of payments made and balances remaining.

Financial Status Reports — DEQ Financial Services completes Financial Status Reports each year. The reports provide an annual check on the total grant expenditures and match funds reported for each grant. These reports help ensure that funds are effectively tracked.

Grant Reporting and Tracking System (GRTS)— The GRTS system provides Montana with a consistent way to report on the status of nonpoint source grants. DEQ has a fully trained administrative staff member to input GRTS information provided by project sponsors under the direction of the Water Quality Planning Bureau's Contracts and Grants Officer who is the GRTS Coordinator. The Contracts/Grants Officer attended the Region 8 GRTS meeting in February at the EPA Regional NPS Officer Meeting in Denver, CO. The Contracts / Grants Officer also attended the National GRTS Meeting in Boston, MA in July of 2005. Montana requires that quarterly and final reports for all 319-project grants be in electronic format to facilitate data entry into GRTS. The final project reports were attached to each project evaluation prior to closing the 1996 and 1999 319 Projects Grant.

Contract Administration Training – Mining City Jeopardy – DEQ in cooperation with the Big Sky Public Procurement Association, Montana Department of Natural Resources and Conservation (DNRC) and the Montana Association of Conservation Districts (MACD) offered a three day training entitled Mining City Jeopardy. The training took place in Butte, MT on October 12 – 14, 2005. Over 80 participants attended who either have current 319 contracts or are from state agencies that collaborate on watershed projects. The featured speakers were: Diane Tordale, Purchasing Bureau Chief, Montana Department of Transportation; Cort Jenson, Consumer Protection Attorney, Montana Attorney General's Office; Laurie Zellar, Program Specialist, Montana Department of Natural Resources and Conservation and Rob Rung, Contracts/Grants Officer, Montana Department of Environmental Quality.

Performance Audits/Administrative Reviews – The Contracts/Grants Officer conducts four performance audits/administrative reviews of 319 project sponsors annually. Initiated in 2004 this activity addresses inconsistencies identified by DEQ among project operations, reporting systems, fiscal tracking and overall project management. DEQ completed performance audits on the Kootenai River Foundation, McCone County Conservation District, Custer County Conservation District and Yellowstone River Conservation District Council in 2005. Each organization audit received a “meets expectations” ranking. The audits found a consistent organization's lack of Administrative Support back-up in case of emergency or termination of the Administrator. The Kootenai River Foundation immediately moved to input corrective action resulting in the ranking being changed from Meets Expectations to Exceeds Expectations. Overall, the project sponsors view the audit/reviews favorably and 7 current grantees have requested audits.

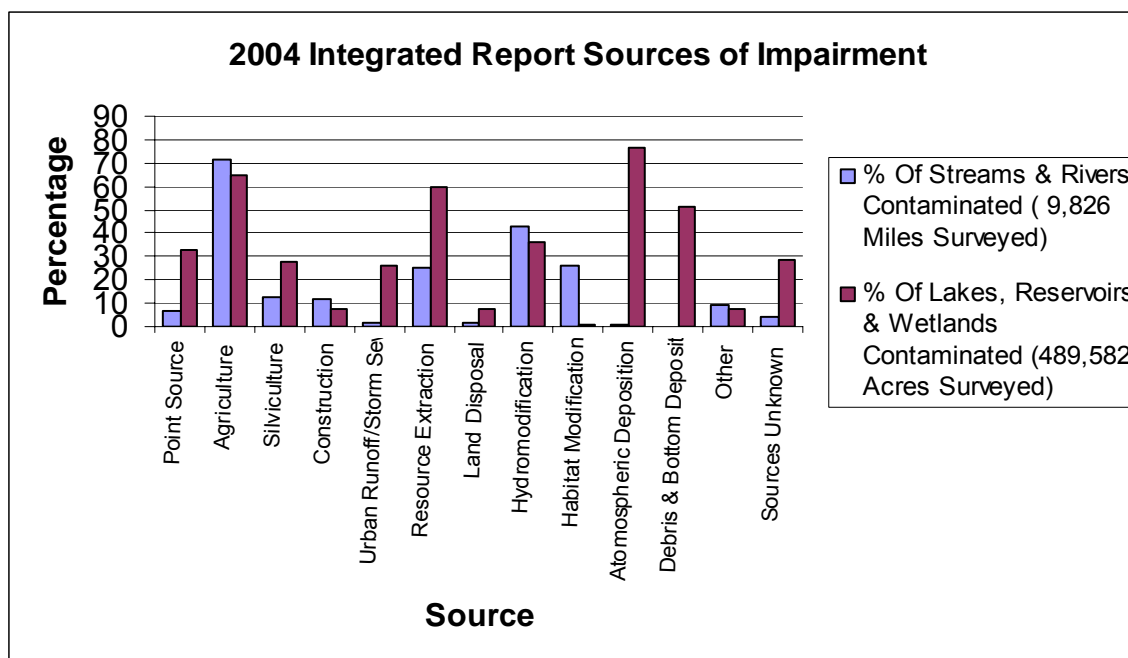
PART 3: IMPLEMENTATION OF NPS PLAN OBJECTIVES

The Nonpoint Source Management Plan contains strategies to achieve it's objectives in varying causative agents. Broad strategies include:

- Support local conservation activities;
- Complete comprehensive assessments;
- Improve collaboration with other programs, agencies, and organizations; and

- Improve connection between assessment, planning, and implementation.

Below are various components that were addressed as causative agents to Nonpoint Source Pollution, found in the 2001 Nonpoint Source Management Plan. The 2006 Nonpoint Source Management Plan will be structured differently. At this time however, DEQ will address updates and actions for 2005 in this manner. Please refer to the figure below, which displays the 2004 Integrated Report Sources of Impairments to Montana waters.



NPS AGRICULTURE UPDATES FOR 2005

- DEQ participated in the State Technical Committee of the NRCS.
- Funded 319 project to reduce sediment in the Sun River watershed (Big Coulee)
- Funded 319 project to implement TMDL's in Teton Watershed through stream bank restoration, off-stream livestock water projects, and integrated water management planning
- Funded a 319 project for the Blackfoot to implement – grazing management and riparian improvements on two ranches

NRCS Farm bill funding: Under the Conservation Security Program, NRCS funded numerous producers in the Shields, Marias, Sage Creek, Poplar, Lower Yellowstone and O'Fallon watersheds for their stewardship efforts.

- \$24,000,000 of Environmental Quality Improvement Project money was awarded to Montana to fund agricultural environmental improvements.

- \$13,000,000 of Environmental Quality Improvement Project money was awarded to individual producers through local Conservation Districts for funding environmental protection or improvements.
- \$2,300,000 of Environmental Quality Improvement Project money was awarded to address animal and confined animal feeding operations around the state.
- Seven special initiatives were funded which included aquatic species enhancements (arctic grayling, spring rise on the Missouri for paddle fish and pallid sturgeon), forest health and watershed improvements in the Blackfoot River.
- The wetland reserve program received \$3,000,000 for protecting wetland areas, focusing on the prairie pothole region.

NPS IRRIGATED AGRICULTURE UPDATES

- The 2004 Montana 303d list identified flow alteration and dewatering as the cause of beneficial use impairment on 200 waterbodies. Both of these causes are often associated with irrigation practices.
- The National Center for Appropriate Technology (NCAT) completed a NPS 319 project: *A Watershed Approach to Better Irrigation Management*. The project revised and reprinted 7,500 copies of *The Montana Irrigator's Pocket Guide*. The guide covers irrigation water management and equipment maintenance. It also covers energy conservation, gated pipe, drip irrigation, variable-speed pumps, solar and wind energy applications, soil moisture monitoring, and AgriMet weather stations. Due to the great demand, the Montana Water Irrigator's Pocket Guide was revised and new handbooks were distributed in 2005 with the financial assistance of the Department of Natural Resources and Conservation, the Bonneville Power Administration and the US Department of Energy.

NPS RANGELAND UPDATES

The primary State and Federal rangeland management agencies in Montana are the Department of Natural Resources State Lands program (school trust lands), the Bureau of Land Management and the US Forest Service. These agencies all participate in various forms, with other agencies (e.g. Natural Resources Conservation Service, Department of Environmental Quality) and at many levels of organizations to communicate and coordinate on water resource issues, including monitoring, funding, Best Management Practices, etc.

- DEQ continues to promote the Rangeland Improvement Loan program of DNRC as a means to install BMPs. <http://www.dnrc.state.mt.us/cardd/cardd.html>
- DEQ also continues to support the Montana Rangeland Monitoring Program. This program was developed in 1998 by a diverse group of organizations including the Montana Stockgrowers, the Montana Wildlife Federation, the Montana Association of State Grazing Districts and Rocky Mountain Elk Foundation.

NPS HABITAT MODIFICATION UPDATES

- Continue education/information efforts such as the Flathead Lakers Critical lands Project, Montana Volunteer Water Monitoring Project and the Middle Clark Fork Watershed Education Network to raise public awareness of healthy stream systems.

Montana Fish, Wildlife & Parks Future Fisheries Program -- For 2005, the Future Fisheries Improvement Program funded 33 projects and committed a total of \$727,857.00. Matching contributions from other funding sources that were contributed to these projects totaled an additional \$1,468,876.00. Currently, the status of these 33 projects widely varies from pending, in-progress or complete. Types of projects that were funded include fish passage, spawning habitat, riparian fencing and enhancement, channel restoration, fish screens, pool enhancement, non-native fish removal, and pond/reservoir spawning and rearing enhancement. Drainages involved included the Big Hole, Yellowstone, Ruby, Jefferson, Blackfoot, Shields, Thompson, Upper Missouri, Clark Fork, Clark's Fork of the Yellowstone, Madison, and Marias.

Visit the website at: <http://fwp.mt.gov/habitat/futurefisheries/content.asp>



Restoration of a 2,200-foot reach of Prickly Pear Creek located near the city of Helena. A proper dimension, pattern and profile were restored to this reach of stream, willow clumps and sod were transplanted along the stream bank and the riparian corridor was protected from overgrazing with the installation of fencing. **Left photo** shows stream reach prior to restoration. **Right photo** shows stream reach two months after restoration.

NPS RESOURCE EXTRACTION UPDATES

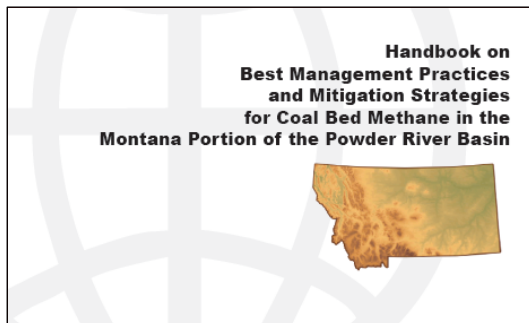
Abandoned Mine Lands Projects, funded through the Abandoned Mine Reclamation Fund, completed in 2005 include:

- Wickes Smelter Cleanup Project located in the Prickly Pear Creek watershed,
- Ontario Mine Reclamation Project located in the Telegraph Creek Watershed.

- Coal Creek Mine Reclamation, near Ashland in Powder River County, Montana. Coal Creek flows through the site and eventually drains to Otter Creek, which flows into Tongue River. In addition to reclaiming subsidence features, AMS and the Title V Coal Program reclaimed coal mining waste. AMS funding is through the Department of Interior's Abandoned Mine fund.
- Two Coal mining wastes were reclaimed at the Jeffries Coal Mine Site within the Musselshell River drainage. Coal mining wastes were reclaimed at the Republic # 4 situated also within the Musselshell River Drainage. Funding was through the Department of Interiors Abandoned Mine fund.

The Powder River Basin in Montana and Wyoming has been the site of rapidly increasing Coalbed Methane development in recent years. To produce the gas, developers pump high volumes of water from the coal seams. This "produced water" as it is commonly known, is rich in sodium bicarbonate. Due to potentially high volume discharge to surface waters and also increased salinity and the potential for the increase in sodium adsorption ratio (SAR) the need for water quality standards to protect irrigated agriculture was identified in Montana. In response to this concern for adverse impact to water quality, the Montana Board of Environmental Review (BER) adopted water quality standards in March of 2003 to protect irrigated agriculture.

A coalition of environmental and agriculture groups brought a petition in the summer of 2005 to the BER to tighten regulation of the CBM industry. In response, the BER modified the approach adopted in 2003 to a more protective, and traditional approach to Montana's nondegradation policy for EC and SAR.



- The Handbook on Best Management Practices and Mitigation Strategies for Coal Bed Methane in the Montana Portion of the Powder River Basin is available on line at:

<http://www.mdt.state.mt.us/research/projects/env/erosion.shtml>

NPS FORESTRY UPDATES

The Forestry Best Management Practices (BMP) Audit accomplishes five things: (1) determines if BMPs are being applied on timber harvest operations, (2) evaluates the general effectiveness of BMPs in protecting soil and water resources on the specific sites, (3) determines how to implement the Montana Streamside Management Zone (SMZ) law and rules more effectively to protect water quality, (4) determines the focus of future educational efforts, and (5) evaluates and provides information on the need to revise, clarify, or strengthen BMPs.

In 2004, the audit team, coordinated by the Department of Natural Resources and Conservation's Forestry Division, evaluated thirty-nine timber harvest sites on

public and private lands. Audit results showed that across all ownerships, BMPs were properly applied 97 percent of the time. Audit results also showed that across all ownerships, BMPs were effective in protecting resources 99 percent of the time. The entire 2004 Forestry BMP Audit Report can be seen at <http://www.dnrc.mt.gov>. DEQ continues to participate in the Forestry BMP audit program. Field audits are done on a biennial basis. Field BMP audits are planned for 2006.

NPS STORMWATER UPDATES

Stormwater from seven major cities in Montana will be covered through permits. The cities are Billings, Bozeman, Butte, Great Falls, Helena, Kalispell and Missoula. In late 2004 the cities appealed the Montana Pollution Discharge Elimination System general permit for stormwater discharges from small Municipal Separate Storm Sewer Systems. In 2005 DEQ worked with the cities to resolve the permit appeal and develop the permit applications. Implementation of the storm water management plans required under the permits is expected to improve stormwater quality discharges from these previously unregulated systems.

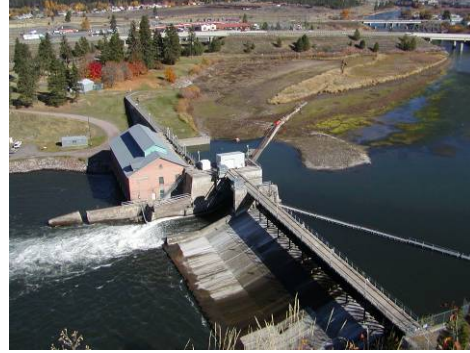
- Cities with Local Water Quality Protection Districts continue to have active campaigns to reduce urban and residential pollutants that access storm drains. Also universities promote pollution prevention and education. http://www.facs.umt.edu/facilities/Energy_Uilities/StormWater.aspx

NPS LAND DISPOSAL UPDATES

- Two databases are available from Montana's Natural Resources Information Services to map the change in septic tank density between 1999 and 2000. An information table can be downloaded for each TMDL planning area showing the number of acres with low, medium and high septic system density. It also shows acres covered by city sewer.
- Databases also are available for landfill locations, underground storage tanks, and locations of RV dump sites. Landfills are noted as being open or closed.
- The Tristate Water Quality Council produced a report in 2005 titled "Septic System Impact on surface Waters – A Review for the Inland Northwest" that provides information on the impacts of septic systems and recommendations for mitigating the impacts to surface waters. This report is being distributed through the Tristate Council and its members to heighten the general public's awareness of this pollutant source and options for reducing those impacts.

NPS HYDROMODIFICATION UPDATES

Milltown Dam



In April 2003, the U.S. Environmental Protection Agency (EPA) issued its proposed plan for the Milltown Reservoir and Dam site. In December 2004, the EPA issued the remediation plan, or Record of Decision for the Milltown site. These plans called for removing the dam and portions of the contaminated sediments behind the dam. In August 2005, federal, state and tribal governmental entities reached agreement on a settlement with ARCO and NorthWestern Corporation for the cleanup and restoration of the Milltown Reservoir area. The consent decree will allow the Milltown site to be returned to an attractive, ecologically healthy area. Since then, the state, in cooperation with the U.S. Fish and Wildlife Service and the Confederated Salish and Kootenai Tribes, has been working to combine the restoration and remediation work at the site.

The restoration plan's objectives are to:

- Restore the river channels at the confluence to be naturally functioning and self-maintaining
- Improve water quality by reducing the rate of erosion of the contaminated sediments that are left in place
- Provide high quality habitat for fish and wildlife
- Improve aesthetic values in the area by creating a diverse, natural setting
- Provide functional wetland and riparian communities
- Provide safe recreational opportunities such as river boating, fishing and trail access for hiking and bicycling

More information is provided by the ROD:

<http://www.epa.gov/region08/superfund/sites/mt/milltowncfr/mrsrod.html>

Consent Decree: <http://www.epa.gov/region08/superfund/sites/mt/milltowncfr/home.html>

Fort Peck Dam

The Army Corps of Engineers (ACE) completed the final 2004-2005 Annual Operating Plan for the Missouri River that emphasized water conservation. The ability to raise reservoir levels during the spring fish spawn is dependent on the volume, timing and distribution of runoff. If the drought persists, the ACE will attempt to raise levels in Fort Peck during May and June. There is a plan in place for a spring rise spill test (called the "mini-test") but the continued low Fort Peck reservoir level precluded the test in 2005.

Holter, Hauser, and Canyon Ferry Dams

An Upper Missouri River Advisory Committee (which includes State and Federal agencies and private dam operators continues to meet to discuss water quality, quantity and fisheries issues on an annual basis. In 2005 the Bureau of Reclamation continued work to increase dissolved oxygen in water released from Canyon Ferry Dam by injecting air into the draft tubes within the dam.

Summary of 2005 Avista -Clark Fork Water Resource Projects

Avista Corporation owns and operates the Noxon Rapids and Cabinet Gorge hydroelectric developments (Clark Fork Project No. 2058). The operation of the Clark Fork Project is conditioned by the Clark Fork Settlement Agreement (CFSA), signed in 1999, and Federal Energy Regulatory Commission (FERC) License No. 2058, effective date of March 1, 2001.

In 2005, Avista implemented the terms and conditions of the CFSA for the seventh consecutive year and the terms and conditions of the FERC License for the fifth consecutive year. As specified in these documents, the 28 members of the Management Committee (MC) oversaw the implementation of all Protection, Mitigation and Enhancement measures (PM&Es) identified in the CFSA, reviewed and approved proposed modifications and clarifications of the CFSA, and reviewed proposed license amendments and/or modifications. In 2005, MC held two meetings in March and September.

Avista implemented the following key activities in 2005 to benefit Water Resources:

- Maintained general operating limits for the Clark Fork Project; monitored their effects (particularly those of minimum flow at Cabinet Gorge) on fish populations.
- Initiated physical and numeric modeling of the conceptual design for the proposed Gas Supersaturation Control Program (GSCP) Cabinet Gorge Tunnel Project. The goal is to sequentially reopen the two original diversion tunnels, thereby reducing total dissolved gas (TDG) levels from the dam.
- Completed watershed assessments on Chloride Gulch (a tributary to Gold Creek) and Graves Creek, and continued work on the Vermilion River Assessment. This information will be utilized to direct future acquisition and enhancement projects.
- In collaboration with the United States Forest Service (USFS) and the Idaho Department of Fish and Game (IDFG), completed the restoration of one mile of Granite Creek. This project will restore migratory corridor, spawning, and rearing habitat previously unavailable for bull trout, due to a head cut created by recent floods. It will also eliminate the need to manually transport bull trout upstream for spawning.
- Continued implementation of Noxon Reservoir Walleye Life History Investigations. The goal of this project is to determine seasonal habitat use of

walleye in Noxon Reservoir. Walleye is an illegally introduced predator that could compete with native salmonids.

- Funded Lake Trout Angler Incentive Program on Lake Pend Oreille. This program is being evaluated by IDFG along with lake trout netting as possible means of suppressing lake trout populations that may compete with native salmonids.
- The Lower Clark Fork Habitat Problem Assessment was completed in 2005. The purpose of the assessment is to provide a framework to develop and prioritize habitat restoration within the Avista program to help restore bull trout and westslope cutthroat trout in the lower Clark Fork watershed.
- Cooperated with Lake Pend Oreille Idaho Club to develop an educational bathymetric map of Lake Pend Oreille.
- Monitored habitat restoration projects on Prospect Creek, East Fork Bull River, Twin and South Fork Bull River drainages.
- Transported 29 adult bull trout above Cabinet Gorge Dam. Of these fish, 18 were genetically linked to tributaries to, or above, Noxon Reservoir and were surgically implanted with radio transmitters and tracked throughout the year. This project was conducted in partnership with PPL Montana, to assist PPL in determining an appropriate fish trap entrance location at PPL's Thompson Falls Dam and to help re-establish connectivity between Lake Pend Oreille and spawning and rearing habitat in Montana streams.
- Captured 279 juvenile bull trout in the Bull and Vermilion River drainages, and Rock, Pilgrim, and Graves creeks. Of these bull trout, 145 were transported and released downstream of Cabinet Gorge Dam as part of the ongoing juvenile transport evaluation.
- The moveable fish trap was modified to simplify future installation and facilitate deployment. The trap was deployed near the Cabinet Gorge Fish Hatchery (just 2005 Annual Report 1-4 Executive Summary downstream of Cabinet Gorge Dam) and operated for four months without incident. Unfortunately, the trap caught very few fish and no bull trout.
- Continued preliminary design of the Thrust Block Fish Trap; utilized the physical model developed for the GSCP tunnel project to model the conceptual trap design to be located at Cabinet Gorge Dam; initiated site modifications and finalized electrical design.
- Continued bull trout enforcement and education programs, thereby reducing mortality of an ESA-listed species.
- Removed bluegill from private ponds adjoining Cabinet Gorge Reservoir. Bluegill are a non-native, illegally introduced species. Montana Fish, Wildlife, and Parks (MFWP) was concerned that bluegill could become established in the reservoir.

See the following website for further information.

http://www.avistautilities.com/resources/hydro/clarkfork/assets/CF_Annual_Report_2005.pdf

NPS TRANSPORTATION UPDATES

The Department issued *Recommendations for Winter Traction Materials Management on Roadways Adjacent to Bodies of Water*, which can be found at:

http://www.mdt.state.mt.us/research/docs/research_proj/traction/final_report.pdf

The Maintenance BMPs can be found on the Department's website:

<http://www.mdt.state.mt.us/departments/maintenance/docs/mmanual/sectione.pdf>

The BMP's for Erosion and Sediment Control can be found at:

<http://www.mdt.state.mt.us/research/projects/env/erosion.shtml>

The Department of Transportation finalized their research on snowplow sidecast of traction sand. It was found that most of the traction material that is side cast from the road lands within 20 feet of the plowed edge and that speed of the plow has little effect on the distance the material is thrown.

The DEQ is participating in an effort lead by the Montana Department of Transportation and federal Highways Administration called the "US 93 Interagency Review Team Working Group" (IRTWG). The goal of the group is to develop an integrated approach to mitigating impacts of the highway program to ecosystem functions. The focus of the group's activities has shifted from the Highway 93 corridor to the Swan, in order to better coordinate the early planning and development of creative alternatives to meet future transportation needs.

PART 4: INTRAGENCY & INTERAGENCY COLLABORATION

The watershed planning approach provides a coordination tool for DEQ programs. For example, the Source Water Protection Program uses the same planning regions as the TMDL program. The watershed approach increases public understanding and involvement in water quality issues. Citizens who organize on a watershed basis to address weeds or water quantity issues often add water quality issues to their list of concerns. The following program objectives and activities foster cooperation and coordination.

4.1 INTRAGENCY COLLABORATION

- DEQ management has designated TMDL development as one of the department's highest priorities. Department management has directed all divisions, bureaus and sections to support and collaborate with the nonpoint program in developing water quality restoration plans and meeting the court-ordered schedule.
- DEQ supported the legislative change that extended the TMDL completion date and participated in the negotiated settlement agreement. The outcome is that all necessary TMDLs will be completed by 2012.
- Improved coordination between monitoring and planning sections by changing the dual management structure; and brought staff together in the same building.

- The Water Quality Planning Bureau reorganized and moved the Contracts/Grants Officer directly under the Bureau Chief in order to coordinate all contracting functions in the bureau. A new bureau structure was created to facilitate TMDL planning and implement the goals of the Nonpoint Source Pollution Program. The new "Watershed Protection Section" will implement approved TMDLs, provide effectiveness monitoring, and coordinate and manage the Nonpoint Source Pollution Program.
- Implement monthly meetings between Permitting Division and Water Quality Planning Bureau

4.2 INTERAGENCY COLLABORATION

- Work with the Governor and the Cabinet to designate water quality restoration as a high state priority; and to facilitate cooperation in plan development and implementation by other state agencies. Develop Memorandums of Understanding with other state agencies delineating their roles in the TMDL process.
- The Nonpoint Source program continues to monitor the activities of the Water, Wastewater and Solid Waste Action Coordinating Team (W₂ASACT) and the State's revolving loan fund program as it pertains to funding nonpoint source water quality improvement projects (e.g. irrigation efficiency projects, or potentially stormwater improvement projects).
- DEQ and the Bureau of Land Management have revised a Memorandum of Understanding. Coordination has been enhanced with the Forest Service who has provided a liaison to DEQ concerning water quality issues on national forest lands.
- The 2004 319 Grant reviews increased the scoring focus on TMDL planning and implementation. Additional scoring criteria and points were provided for projects that implemented a completed TMDL.
- The NRCS has criteria for ranking EQIP and other water quality projects that include bonus points for projects in watersheds with 303(d) listed streams and for activities that implement TMDLs and Water Quality Restoration Plans. DEQ and NRCS continue to explore opportunities to coordinate funding and resources that meet the goals of both agencies.
- A MOU with the Kootenai-Salish Tribe was drafted but not finalized. DEQ has met with staff of the Rocky Boy Water Resources Department, the Blackfoot Environmental Office, and the Ft. Peck Office of Environmental Programs. These contacts served to coordinate activities related to 319 projects and TMDL's.

4.2.1 INTERAGENCY COUNCILS

The **Statewide TMDL Advisory Group** (STAG) serves as consultants to DEQ. The group is made up of fourteen members appointed by the DEQ director. The members represent the interests of livestock, farming, conservation or environment, recreation, forestry, municipalities, point source dischargers, mining, federal and state trust land management agencies, conservation districts, hydroelectric power, and fishing.

They assist in prioritizing planning areas and advise the program on how to respond to changing situations.

The **Montana Watershed Coordination Council (MWCC)**— The Montana Watershed Coordination Council is a statewide information and support network created to advance local watershed work. The coordination council serves as a forum for and link between local watershed groups that need assistance in enhancing, conserving and protecting natural resources and sustaining the high quality of life in Montana for present and future generations. It also serves as a statewide network coordinating Montana's natural resource agencies and private organizations in order to share resources, identify and capitalize on opportunities for collaboration, and avoid duplication of efforts. DEQ is an active participant and sponsor of the MWCC. DEQ continues to support and participate in the Montana Watershed Coordination Council. Visit the MWCC site at <http://water.montana.edu/watersheds/default.asp>

The Water Activities Work Group, a work group of the MWCC, advises DEQ on the Nonpoint Source Management Program, including annual 319 project grant awards. The group includes agencies, academia, conservation district and watershed group representatives.

4.2.2 WATERSHED GROUPS

There are about 70 watershed groups in Montana. Each watershed group reflects the unique set of land and water uses in the area. DEQ consults with many watershed groups and conservation districts at critical decision points in water quality restoration planning. DEQ supports the participation of farmers, ranchers, environmentalists and recreationists, as well as representatives of DNRC, the Forest Service, Bureau of Land Management, municipalities and the forest, mining and tourism industries. Watershed groups often focus on particular problems associated with a lake or stream. Some groups have expanded their focus to coincide with DEQ's TMDL watershed planning areas. Other groups concentrate on sub-watersheds. A few focus on larger areas but confine their attentions to specific problems. Several groups list their activities on the Montana Watershed Webpage: <http://water.montana.edu/watersheds/groups/default.asp> Conservation districts often take the lead in organizing watershed projects.

In 2005 DEQ watershed planners met with several new groups to discuss local involvement in the TMDL planning process, and issues within watersheds. One group on the Upper Yellowstone is active in water quantity and weed issues. They are considering expanding their area of interest to water quality and endangered species. Another is the Rosebud Watershed Group and initial meetings discussed Coal Bed Methane and its ramifications. Initial meetings with various groups on the Clark Fork River may be a catalyst to form a group to address water quality restoration. Previously these groups have focused on Superfund issues and groundwater protection.

A Success Story: TEAMWORK accounts for the many successes in the Sun River Watershed.



When the Montana Department of Environmental Quality (DEQ) began a planning effort to write the Sun River Water Quality Restoration Plan, they sought the help of the Sun River Watershed Group. This partnership produced a workable plan that the group is helping to implement.

The Sun River Watershed Group used federal 319 and local matching funds to provide environmental information and local input for the plan. The plan not only fulfills DEQ's responsibilities under the Clean Water Act and Montana Water Quality Act, it also provides a useful document to guide voluntary activities by local groups to improve water quality. To date, the Sun River Watershed Group and the Muddy Creek Task Force have coordinated many important restoration projects.

For 15 years, this partnership of committed groups and individuals has worked to restore Muddy Creek. Irrigation water management, riparian management, and stream channel work have improved water quality. Cost effective approaches are being evaluated to return Muddy Creek to water quality standards.

The Greenfields Irrigation District is working to reduce erosion-causing peak flows to Muddy Creek. A "re-regulation reservoir" is being considered. Nutrient management planning will reduce nutrient loading. And the Conservation Reserve Program may be effective in reducing salinity and selenium by converting lands that are dry land cropped and contribute to saline seep with rangelands.

In-stream flow in the upper Sun River is an important factor in achieving sediment and temperature targets. In-stream flow may increase with strategic application of irrigation management practices and on-farm efficiencies, if water savings are recognized as salvage water. Participation in these activities is voluntary and will not jeopardize established water rights.

The Forest Service is addressing the National Forest lands that drain water and sediment to Gibson Reservoir with a special designation, improvements to its trail system, and a series of controlled burns in the South Fork of Sun River to reduce the chance for larger and more intense fires.

The Bureau of Reclamation and stockmen will address range health around Willow Creek Reservoir and Ford Creek. The Willow Creek Feeder Canal System contributes significant amount of sediment to the reservoir. A working partnership of the Lewis & Clark Conservation District; Bureau of Reclamation; Greenfields Irrigation District; Montana Fish, Wildlife & Parks; local landowners; and many others have begun an erosion control program.

Recently, the Sun River Watershed Group received a \$10,000 Five Star Restoration Challenge Grant from the National Association of Counties. These projects feature a cooperative effort between local government agencies, elected officials,

community groups, businesses, schools, and environmental organizations. The goal is to improve local water quality and restore important fish and wildlife habitats.

The Sun River Watershed Group will restore three miles of riparian area by removing more than 100 car bodies, placing erosion matting on the raw banks, and planting 2,000 willow and cottonwood trees.

4.2.3 CONSERVATION DISTRICTS

Conservation districts often serve as fiscal and administrative agents for 319 grants. In order to improve communication and collaboration, DEQ staff attended the state convention of the Montana Association of Conservation Districts. Visit their website at <http://www.macdnet.org/>

New funding and grant opportunities at NRCS will help watershed groups and conservation districts organize and complete key projects. MACD administers the Local Empowerment Program (LEP) in Montana, with a LEP Committee reviewing grant applications. In 2005, each grant was no more than \$50,000 and twenty percent of the available grant funding was to be spent on demonstration projects.

PART 5: REFERENCES

Bahls, L.I., Bukantis, B., and S. Trelles. 1992. Benchmark biology of Montana reference streams. Montana Department of Health and Environmental Science, Helena.

Hawkins, C. P. 2005. Personal Communication. Western Center for Monitoring and Assessment of Freshwater Ecosystems Approach to Evaluating Reference Sites.

Hughes, R. M.; D. P. Larsen; and J. M. Omernik. 1986. Regional reference sites: a method for assessing stream potential. *Environmental Management* 5: 629-635.

Jessup, B.; J. Stribling; and C. Hawkins. 2005. Biological Indicators of Stream Condition in Montana Using Macroinvertebrates. Tetra Tech, Inc. November 2005 (draft).

Montana Department of Environmental Quality. 2004. Water Quality Integrated Report for MT 2004. Water Quality Planning Bureau, Helena.
<http://nris.state.mt.us/wis/envirnet/>

Montana Department of Environmental Quality. 2005a. Quality Assurance project Plan (QAAP): sampling and Water Quality Assessment of Streams and Rivers in MT 2005. Water Quality Planning Bureau, Helena.
<http://www.deq.state.mt.us/wqinfo/QAProgram/index.asp>

Montana Department of Environmental Quality. 2005b. Field procedures Manual. Water Quality Planning Bureau, Helena.
<http://www.deq.state.mt.us/wqinfo/QAProgram/index.asp>

- Montana Department of Environmental Quality. 2005c. Administrative Standards Operating Procedure (SOP). Technical and Administrative Review of Sufficient Credible Data and beneficial use Support Determinations. Water Quality Planning Bureau, Helena. <http://www.deq.state.mt.us/wqinfo/QAProgram/index.asp>
- Montana Department of Environmental Quality (DEQ). 2005d. Sample Collection, Sorting, and Taxonomic Identification of Benthic Macroinvertebrates. Water Quality Planning Bureau. Standard Operation Procedure (WQPBWQM-009).
- Omernik, J.M., 1987. Ecoregions of the Conterminous United States. *Annals of the Association of American Geographers* 77: 118-125.
- Suplee, M.; R. Sada de Suplee; D. Feldman; and T. Laidlaw. 2005. Identification and Assessment of Montana Reference Streams: A Follow-Up and Expansion of the 1992 Benchmark Biology Study. Montana Department of Environmental Quality, Planning Prevention and Assistance Division, Water Quality Planning Bureau, Water Quality Standards Section. 1520 E. 6th Avenue, Helena, MT 59620.
- U.S. Environmental Protection Agency. 2004. Environmental and Assessment Program-Surface Waters. Western Pilot Study - Field Operations Manual for Wadeable Streams. USEPA.
- U.S. Environmental Protection Agency. 2003. Environmental and Assessment Program-Surface Waters. Western Pilot Study - Field Operations Manual for Non-Wadeable Streams. USEPA.
- Woods, A. J.; J. M. Omernik; J. M. Nesser; J. Sheldon; J. A. Comstock; S. H. Azevedo. 2002, Ecoregions of Montana, 2nd Edition (Color Poster with Map, Descriptive Text, Summary Tables, and Photographs): Reston, Virginia U.S. Geological Survey (Map Scale 1:1,500,000).

